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JAMS, JELLIES AND MARMALADE

:Prepared by
Gulf technical committee for sector standard of food and agricultural products

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By the Board of Directors**

Foreword

GCC Standardization Organization (GSO) is a regional Organization which consists of the National Standards Bodies of GCC member States. One of GSO main functions is to issue Gulf Standards /Technical regulations through specialized technical committees (TCs).

GSO through the technical program of committee TC No. 5 " Technical Committee for Sector of Food and Agriculture Products " has update this gulf standard JAMS , JELLIES AND MARMALADE "

". The Draft Standard has been prepared by (*State of Kuwait*).

The draft Standard has been prepared based on relevant ADMO,International and National foreign Standards and references.

This standard has been approved as a Gulf (Standard / Technical Regulation) by GSO Board of Directors in its meeting No.(),held on / / H
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JAMS, JELLIES AND MARMALADE

1- Scope

1.1 This Gulf Standard applies to jams, jellies and marmalades that offered for direct consumption, including for catering purposes or for repacking if required. This Standard does not apply to :

- a) products when indicated as being intended for further processing manufacture of fine bakery wares, pastries or (such as those intended for use in the biscuits) .
- b) products which are clearly intended or labelled as intended for special dietary uses .
- c) reduced sugar products or those with a very low sugar content
- d) products where the foodstuffs with sweetening properties have been replaced The wholly or partially by food additive sweeteners .

1.2 terms, “preserve” or “conserve” are sometimes used to represent products covered by this Standard.

- The use of the terms “preserve” and “conserve” are thereby required to comply with the requirements for jam and/or extra jam as set out in this Standard

2- Complementary References

2.1 GSO 9 "Labeling of prepackaged food stuffs " .

2.2 GSO 20 " Methods for the Determination of Contaminating Metallic Elements in Foodstuffs " .

2.3 GSO 21 " Hygienic regulation for food plants and their personnel " .

2.4 GSO 22 " Methods of Test for Colouring Matter Used in Foodstuffs " .

2.5 GSO 150 " Expiration Periods of Food Products - Part 1 " .

2.6 GSO 763 " Fruit and Vegetable Products - Determination of Mineral Impurities " .

2.7 GSO 299 " Methods of Test for Vegetable, Fruits and their Products – Part 2: Determination of Moisture, Alcohol-Insoluble Solids, Total Ash, Calcium, Mineral Oil, and Ascorbic Acid " .

2.8 GSO ISO 5518 " Fruits, Vegetables and Derived Products - Determination of Benzoic Acid Content - Spectrophotometric Method " .

2.9 GSO ISO 5519 " Fruit and Vegetable Products - Determination of of Sorbic Acid Content " .

2.10 GSO ISO 5522 " Fruit and Vegetable Products - Determination of Sulphur Dioxide Content " .

2.11 GSO 244 "Fruit and Vegetable Products - Part (1): Organoleptic Examinations - Determination of Net Weight and Drained Weight, Determination of Apparent Viscosity, Determination of Headspace, Determination of Extraneous Matter and Defective Fruits " .

2.12 GSO 1016 “Microbiological Criteria for Foodstuff – Part 1”

2.13 GSO 1000 " Methods of Sampling for Prepackaged Food Products " .

2.14 GSO ISO 2173 " Fruit and Vegetable Products - Determination of Soluble Solids Content - Refractometric Method " .

2.15 "Fruit and Vegetable Products - Detection of Sweeteners " that will be adopted by GCC

2.16 GSO 1820 Fruit juice and nectars .

2.17 GSO 148 Sugar

2.18 GSO 147 Honey

2.19 GSO 192 " food additives that will be adopted by GCC

3 – Definitions

3.1 Jam: is the product brought to a suitable consistency, made from the whole fruit, pieces of fruit, the un concentrated and/or concentrated fruit pulp or fruit puree, of one or more kinds of fruit, which is mixed with foodstuffs with sweetening properties as defined in Section 12.3, with or without the addition of water.

3.2 Jellies : are the products brought to a semi solid gelled consistency and made from the juice and/or aqueous extracts of one or more fruits, mixed with foodstuffs with sweetening properties as defined in Section 12.3, with or without the addition of water.

3.3 Citrus Marmalade : is the product obtained from a single or a mixture of citrus fruits and brought to a suitable consistency. It may be made from one or more of the following ingredients whole fruit or fruit pieces, which may have all or part of the peel removed, fruit pulp, puree, juice, aqueous extracts and peel and is mixed with foodstuffs with sweetening properties as defined in Section 2.2, with or without the addition of water .

3.4 Non Citrus Marmalade is the product prepared by cooking fruit ,whole, in pieces, or crushed adding foodstuffs with sweetening properties as defined in Section 2.2 to obtain a semiliquid or thick liquid.

3.5 Jelly Marmalade : is the product described under citrus marmalade from which all the insoluble solids have been removed but which may or may not contain a small proportion of thinly cut peel .

3.6 Fruit : Means all of the recognised fruits and vegetables that are used in making jams including but not limited to those fruits mentioned in this Standard, either fresh frozen, canned, concentrated, dried, or otherwise processed and/or preserved which shall be sound, wholesome and clean and of suitable ripeness but free from deterioration and containing all its essential characteristics except that it has been trimmed, sorted and otherwise treated to remove any blemishes, bruises, toppings tailings, cores, pits (stones) and may or may not be peeled.

3.7 Fruit Pulp : The edible part of the whole fruit, if appropriate less the peel, skin, seeds, pips, etc ,which may have been sliced or crushed but which has not been reduced to a puree .

3.8 Fruit Puree : The edible part of the whole fruit, if appropriate, less the peel, skin, seeds pips and similar which has been reduced to a puree by sieving or other processes .

3.9 Aqueous extracts : The aqueous extract of fruits which subject to losses necessarily occurring during proper manufacture, contains all the water-soluble constituents of the fruit concerned .

3.10 Fruit Juices and Concentrates: Products as defined in Gulf Standard for Fruit Juices in item 2.16 .

3.11 Citrus fruit : Fruit of the Citrus L. family

3.12 Foodstuffs with sweetening properties :

- a) All sugars as defined in the gulf standard in item 2.17 .
- (b) Sugars extracted from fruit (fruit sugars))
- c) Fructose syrup
- d) Brown sugar
- .(e) Honey as defined in the Gulf Standard in item 2.18 .

3.13 Head space : the volume left at the top of an almost filled jar , tin, or other container before sealing

4- Essential composition and quality factors

4.1 COMPOSITION

4.1.1 Basic Ingredients

- a) Fruit ingredient, as defined in Section 3.1 in quantities laid down in Sections 4.1.2 .(a) – (d) below

In the case of jellies the quantities where appropriate shall be calculated after deduction of the weight of water used in preparing the aqueous extracts.

- b) Foodstuffs with sweetening properties as defined in Section 3.

4.1.2 Fruit Content

The following percentage fruit content for jams and jellies specified at 4.1.2 (a) or 4.1.2 (b) below : shall apply and labeled in accordance with Section 9.1.

- a) -The products, as defined in Section 3 shall be produced such that the quantity of all be not less than 45% in fruit ingredient used as a percentage of finished product general, with the exception of the following fruits :

- 35% for blackcurrants, mangoes, quinces, rambutan, redcurrants, rosehips, roselles , rowanberries and sea-buckthorns.

-30% for soursop and cranberry .

-25% for banana, cempedak, ginger, guava, jackfruit and sappota.

-23% for cashew apples .

-20% for durian .

-10% for tamarind

-8% for passion fruit and other strong flavoured or high acidity fruits.

When fruits are mixed together, the minimum content must be reduced in proportion .to the percentages used .

or

b) The products, as defined in Section 3.2, shall be produced such that the quantity) of fruit ingredient used as a percentage of finished product shall be not less than 35% in general, with the exception of the following fruits :

- 25% for blackcurrants, mangoes, quinces, rambutan, redcurrants, rosehips, roselles , rowanberries and sea-buckthorns .
- 20% for soursop and cranberry .
- 16% for cashew apples.
- 15% for banana, cempedak, guava, jackfruit and sappota .
- 11% - 15% for ginger.
- 10% for durian .
- 6% for passion fruit, tamarind or other strong flavoured or high acidity fruits .

When fruits are mixed together, the minimum content must be reduced in proportion to the percentages used .

- concentrate when In the case of Labrusca grape jam, grape juice and grape juice added as optional ingredients, this may constitute a part of the required fruit content.

c) Citrus Marmalade

The product, as defined in Section 3, shall be produced such that the quantity of citrus fruit ingredients used in the manufacturing of 1000 g of finished product must not be less than 200 g of which at least 75 g must be obtained from the endocarp.

* endocarp : means the fruit pulp (or flesh) which is often subdivided into segments and vesicas containing the juices and the seeds .

-In addition the term “jelly marmalade” as defined in Section 3 may be used when the product contains no insoluble matter but may contain small quantities of thinly cut peel .

d) Non Citrus Marmalade

The product, as defined in Section 2.1, shall be produced such that the quantity of fruit ingredient used as a percentage of the finished product shall not be less than 30% in general, with the exception of the following fruits :

- 11% for ginger .

4.1.3 Other Permitted Ingredients

Any appropriate food ingredient of plant origin may be used in the products covered by this Standard This includes fruit, herbs, spices, nuts, alcoholic drinks and essential oils and vegetable edible oils and fats

used as antifoaming agents, as long as they do not mask poor quality and mislead the consumer. For example, red fruit juice and red beetroot juice may only be added to jams as defined in points 4.1.2 (a) and b) made from gooseberries, plums, raspberries, redcurrants, rhubarb, rosehips, roselle or strawberries .

4.2 SOLUBLE SOLIDS

The soluble solids content for the finished products defined in Sections 4.1.2 (a) – (c) shall in all cases be between 60 to 65% or greater.⁴ In the case of the finished

product defined in Section 3.1.2 (d), the soluble solids content shall be 40 - 65% or less .

4.3 QUALITY CRITERIA

4.3.1 General Requirements

The end product shall be of an appropriate gelled consistency, having normal colour and flavor appropriate to the type or kind of fruit ingredient used in the preparation of the mixture, while taking into account any flavour imparted by optional ingredients or any permitted colouring agents used .

- It shall be free from defective materials normally associated with fruits. Jelly and -extra jelly shall be reasonably clear or transparent.

4.3.2 Defects and Allowances for Jams

The products covered by this Standard shall be largely free of defects such as plant material skins (if peeled), stones and pieces of stones and mineral matters. In the case of berry fruits, Dragon fruit and passion fruit, seeds shall be considered a natural fruit component and not a defect unless the product is presented as " seedless" .

4.4 CLASSIFICATION OF DEFECTIVES

A container that fails to meet one or more of the applicable quality requirements as set out in Section 4.3.1 should be considered as a " defective " .

4.5 LOT ACCEPTANCE

A lot should be considered as meeting the applicable quality requirements referred to in Section 4.3.1 when the number of "defectives" as defined in Section 3.4 does not exceed the acceptance number (c) of the appropriate sampling plan with an acceptable quality level (AQL) of 6.5 .

5 FOOD ADDITIVES

Without prejudice to the requirement that mention in gulf standard GSO 192 " food additives that will be adopted by GCC

Only those food additive classes listed below are technologically justified and may be used in products covered by this Standard. Within each additive class only those food additives listed below, or referred to may be used and only for the functions, and within limits, specified

5.1 Acidity regulators, antifoaming agents, firming agents, reservatives and thickeners used in accordance with Table 3 of the gulf Standard for Food Additives that mentioned in clause 19/2 are acceptable for use in foods conforming to this Standard .

5.2 ACIDITY REGULATORS

INS No	Name of the Food Additive	Maximum Level
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334 , 335 (i) , (ii),336(i),(ii),337	Tartrates	3000 mg/kg
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5.3 ANTIFOAMING AGENTS

INS No	Name of the Food Additive	Maximum Level
900a	Polydimethylsiloxane	10 mg/kg

5.4 COLOURS

INS No	Name of the Food Additive	Maximum Level
100 (i)	Curcumin	500 mg/kg
101(i) , (ii)	Riboflavins	200 mg/kg
110	Sunset Yellow FCF	300 mg/kg
120	Carmines	200 mg/kg
129	Allura Red AC	100 mg/kg
133	Brilliant Blue FCF	100 mg/kg
140	Chlorophyll	GMP
141(i),(ii)	Chlorophylls and ,Chlorophyllins Copper Complexes	200 mg/kg
143	Fast Green FCF	400 mg/kg
150a	Caramel I-Plain	GMP
150b	Caramel II Caustic Sulfite Process	80000 mg/kg
150c	Caramel III – Ammonia Process	80000 mg/kg
150d	Caramel IV – Sulfite Ammonia Process	1500 mg/kg
160a(i)	Carotenes, beta-, (synthetic)	500 mg /kg Singly or in combination
160a(iii)	Carotenes, beta- ((Blakeslea trispora)	
160e	Carotenal, beta-apo- -‘8	
160f	Beta-apo-8’- ,Carotenoic acid ethyl esters	
160a(ii)	Carotenes, beta- (vegetable)	1000 mg / kg
160d(i) , 160d(iii)	Lycopenes	100 mg/kg

161b(i)	Lutein from Tagetes erecta	100 mg/kg
162	Beet Red	GMP
163(ii)	Grape Skin Extract	500 mg/kg
172(i) – (iii)	Iron Oxides	200 mg/kg

5.5 PRESERVATIVES

INS No	Name of the Food Additive	Maximum Level
200-203	Sorbates	1000 mg/kg
210-213	Benzoates	1000 mg/kg
220-225,227,228,539	Sulfites	50 mg/kg as residual SO ₂ in the end product except when made with sulfited fruit when a maximum level of 100 mg/kg is permitted in the end product

6.5 FLAVOURINGS

The following flavourings are acceptable for use in foods conforming to this Standard when used in accordance with good manufacturing practices and in compliance with the Codex Guidelines for the Use of Flavourings (CAC/GL 66-2008): natural flavouring substances that are extracted from the named fruits in the respective product; natural mint flavour; natural cinnamon flavour; vanillin, vanilla or vanilla extracts.

6 – Microbiological Limits

Determination of microbiological limits shall be carried out according to gulf standard GSO 1016 state in clause 12/2 .

7 – Metal contaminants

Determination of metal contaminants shall be according to GSO20 state in clause 2.2.

8 – Packing , storage and transporting

The following shall be observed in packaging, transportation and storage :

8.1 Packaging

8.1.1 The product shall be packed in hygienic, dry , good condition and free from unwanted smell container . the products container should be air tight ,

and made from suitable materials not effecting the physical and chemical properties of the final product .

8.1.2 Minimum Fill

-The container should be well filled with the product which should occupy not less than 90% (minus any necessary head space according to good manufacturing practices).of the water capacity of the container .

-The water capacity of the container is the volume of distilled water at 20oC which the sealed container will hold when completely filled.

- A container that fails to meet the requirement for minimum fill of Section 8.1.2 should be considered as a "defective "

8.2 Transportation and storage

8.2.1 Transportation shall be carried out in such a way as to protect containers from mechanical damage and contamination

8.2.2 The product shall be stored in a well-ventilated place far from sources of direct heat and contamination .

9 – Labelling

Without prejudice to the requirements of GSO 9 which is mentioned in clause 2/the following information shall be declared :

9.1 Name of the product.

9.2 The names of the products shall be :

-In the case of Section 4.1.2 (a)

- Jam (or preserve or conserve) .

- Extra Jam (preserve or conserve) .

- High Fruit Jam (preserve or conserve) .

- Jelly .

- Extra Jelly .

b) in the case of section 4.1.2 b :

- Jam (or preserve or conserve or fruit spread)

- (Jelly (or fruit spread) .

-In the case of Section 4.1.2 (c :

-Marmalade or Jelly Marmalade

In the case of Section 4.1.2 (d :

(X” marmalade (“X” is a non citrus fruit)

9.1.2 The name of the product shall provide an indication of the fruit(s) used in descending order of weight of the raw material used. In the case of products made with three or more different fruits the alternative phrase “mixed fruit” or similar wording or by the number of fruits may be used .

9.1.3 The name of the product may provide an indication of the variety of fruit e.g. “Victoria” plum and /or may include an adjective describing the character e.g. “seedless”, "shred less".

9.2 Guidelines for consumer including per unit of submission .

9.3 year of production – and expiration date .

9.4 Name and address of the source and country of origin .

9.5 Sugar substitutes are used and its percentage

9.6 consumer guidance under the guidance of professional health authorities .

9.7 Product address , and his trademark .

9.8 FRUIT QUANTITY AND SUGAR DECLARATION

Depending on the legislation or requirements of the country of retail sale, the products covered by this Standard may also give an indication of the fruit ingredient content in the form of “prepared with X g of fruit per 100 g” and the total sugar content with the phrase “total sugar content X g per 100 g”. If an indication of fruit content is given this should relate to the quantity and type of fruit ingredient used in the product as sold with a deduction for the weight of any water used in preparing the aqueous extracts.

9.9 LABELLING OF NON-RETAIL CONTAINERS

Information for non-retail containers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions, shall appear on the container .

However, lot identification, and the name and address of the manufacturer, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents .

10 – sampling

Samples shall be taken according to the GSO standard mentioned in 2.13 .

11 – Testing methods

11.1 Methods of test

- Determination of soluble solids shall be carried out according to the GSO2173 standard mentioned in clause 2.14 .
- Determination of impurities shall be carried out according to the GSO ISO 763 standard mentioned in 2.6.
- Determination of extraneous matter shall be carried out according to the GSO standard mentioned in clause 2.11 .
- Ascorbic acid shall be determined according to the GSO299 standard mentioned in clause 2.7 .

- Benzoic acid shall be determined according to the GSO ISO 5518 standard mentioned in 2.8 .
- Determination of the sorbic acid content shall be carried out according to GSO ISO 5519 standard mentioned in 2.9 .
- Sulphur dioxide shall be determined according to the GSOISO 5522 standard mentioned in 2.10 .
- Detection of non-nutritive artificial sweeteners shall be carried out according to the GSO standard THAT MAY BE ADOPTED BY GCC.
- Determination of contaminating elements shall be carried out according to the GSO20 standard mentioned in 2.2 .
- Detection of artificial colouring matter shall be carried out according to the GSO22 standard mentioned in 2.4

11.2 TESTS

- Tests shall be carried out on a representative sample taken according to item 10, to determine its compliance with this standard .

11.3 Determination of water capacity of container

Determination of water capacity of container shall be according to appendix (1) .

10- المصطلحات الفنية

Black Currant	كشمش أسود (عنب أسود)
Damson	برقوق دمشقي (دامسون)
Fast green	أخضر ثابت
Green gage	برقوق أخضر
Goose berry	كشمش
Jam	مُرَبَّى
Jelly	جيلي (هلام الفاكهة)
Loganberry	توت لوجان
Marmalade	مرملاد
Puree	هريس
Pulp	لب
Raspberry	توت الأرض
Rhubarb	راوند
Sunset yellow	أصفر الغروب
Ginger	زنجبيل
Rambutan	رامبوتان
Sea Buckthorns	نبق بحري
Roselles	روسل
Rowan berrie	العنب الأحمر
Soursop	سور سوب
Cempedak	سيمبيداك
Jack fruit	جاك فروت
Sappota	سابوتا
Durian	دوريان
Labrusca	لابروسكا
Dragonfruit	ثمرة التنين

Appendix (1)
Determination of water capacity of containers
(CAC/RM 46-1972)

DETERMINATION OF WATER CAPACITY OF CONTAINERS
(CAC/RM 46-1972)

1. SCOPE

.This method applies to glass containers.

2.DEFINITION

The water capacity of a container is the volume of distilled water at 20°C which the
.sealed container will hold when completely filled

3.PROCEDURE

3.1 Select a container which is undamaged in all respects³

3.2.Wash, dry and weigh the empty container

3.3.Fill the container with distilled water at 20°C to the level of the top thereof, and
.weigh the container thus filled

4.CALCULATION AND EXPRESSION OF RESULTS

Subtract the weight found in 3.2 from the weight found in 3.3. The difference shall
be considered to be the weight of water required to fill the container. Results are
expressed as ml of water .

11-References

CAC STAN 296-2009

CODEX STANDARD FOR JAMS , JELLIES AND MARMALADES